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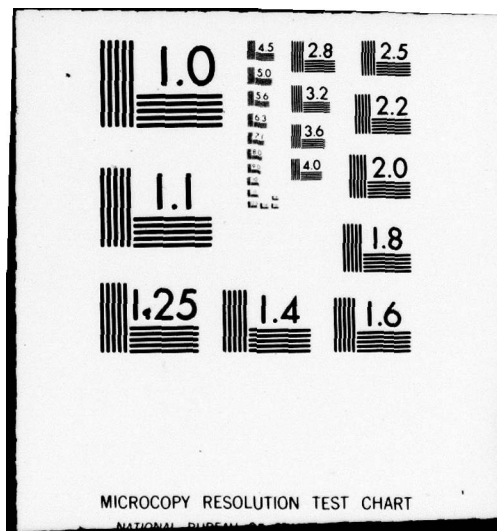
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SPACE WAR



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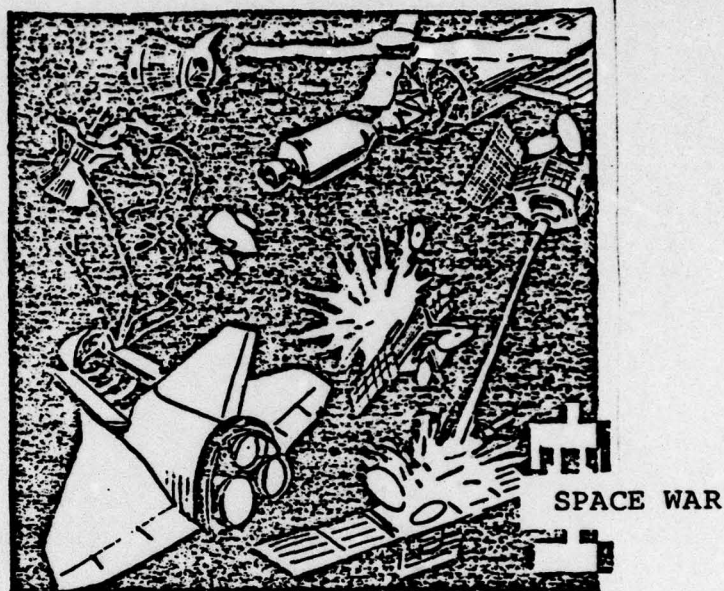
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Attacking like shooting stars

The military arms race between the Soviet revisionists and the American imperialists has expanded from the earth into outer space. As space reconnaissance and anti-reconnaissance technology continues to develop, and the struggle between the two hegemons becomes increasingly intense, a new type of war is brewing in the vast expanse of outer space -- space war. This article is an introduction to the questions of the nature, methods, attacking strategies and opponents in space war.

Man-made earth satellites of all shapes and sizes are constantly revolving in outer space. Their functions are to spy on the enemy, transmit information, survey the earth's natural resources, and so forth. Currently, almost a thousand satellites

belonging to various countries are orbiting the earth. Among them are more than 200 satellites which serve direct military purposes. Almost all of these military satellites have been launched by the two superpowers, the Soviet Union and the United States.

Superpower detectives -- reconnaissance satellites -- also called snoopers, either rely on their "vision" (photographic equipment), or use electronic instruments to gather information about the enemy and send it to military advisory bureaus. These space spies, "occupying" a few hundred to a few thousand kilometers of orbit space, gather information day and night by spying on the enemy's military installations, weapons preparations, military operations, launchings of intercontinental ballistic missiles and deployments of military warships, as well as other intelligence, thus obtaining information which would be unobtainable using conventional means.

The activities of one superpower's space spies can be injurious to another superpower's advantage in making moves of invasion or expansion. Thus they obstruct other superpowers' ambitions for world conquest, and limit other countries' designs for usurping control of outer space. For a number of years the two superpowers have exhausted themselves investigating the various strategies for destroying space satellites, planning surprise attacks and destroying enemy military satellites, especially enemy reconnaissance satellites. In this way, the quietude of outer space becomes a new battlefield seized by the two hegemonies, where a new type of war is brewing -- space war. The opponents turning to space war for resolution are nothing but military satellites, manned space craft, satellite interceptors or orbiting (or partially orbiting) weapons, and so forth. If one superpower makes but one surprise attack on another superpower's reconnaissance satellite, a space war could break out.

At the present time, the two superpowers are launching interceptors into the new battlefield one after another, and are conducting various experiments to test out their capabilities in intercepting orbiting targets. This is a dog-eat-dog struggle between imperialist countries, an arms race between the American imperialists and Soviet revisionists, and a space arms race between two hegemon.

The Making of Space War

As space technology continuously develops, the Soviet and American hegemon place their highest priorities on its military applications. On the one hand, they exhaust their intellectual powers in order to take most complete advantage of the military uses of satellites in attacking the enemy. On the other hand, they make use of various types of defense mechanisms to protect military satellites by avoiding enemy attack.

In order to take full advantage of the military uses of satellites, the superpowers are currently engaged in constant upgrading of satellite capabilities, making them better able to serve their military aims and to gather more intelligence. For instance, ballistic alarm satellites can more quickly and accurately detect the launching of enemy ballistic missiles, and can supply military advisory bureaus with data on the enemy ballistic missile's point of origin and launching time, thus allowing anti-ballistic missile mechanisms sufficient time to prepare for the confrontation. Navigation satellites can more effectively pinpoint the location of nuclear submarines and surface warships. Meteorological satellites can supply military advisory bureaus with more accurate and reliable data on weather conditions.

Spy satellites gather information in various ways. One of the most common ways is used by photographic reconnaissance satellites. These satellites are able to take pictures very quickly while passing over the enemy country in space, and to transmit them to earth while passing over the mother country. There are also many different ways of retrieving pictures. In one, the picture is received directly from the satellite and is processed at an earth station. In another, after the picture is taken, it is developed into a negative on the satellite and transmitted to earth in the form of telegraphic signals via electronic equipment. In a third way, television transmission, the electronic image is sent through a transmitting device, and so forth.

The superpowers have also devoted a great deal of attention to the question of protecting reconnaissance satellites, and have devised many methods to accomplish this aim. First, there is the decoy method. A number of mock-reconnaissance satellites are launched to create a disturbance, and a true reconnaissance satellite is hidden among them. A "dark" satellite, one that has a layer of protective material on its surface to absorb radio waves and one which does not send out telegraphic signals itself, can be launched. When its camouflaging mechanism is activated it is impossible for the enemy to discover any traces of its existence.

Secondly, there is the "survival" capability. Because laser weapons do serious damage to satellites, especially those run on solar batteries, satellites have been adapted to accommodate nuclear energy sources or isotopic thermal energy generators in order to raise their capacity for survival. Other satellite units have also been devised in order to avoid harm.

Thirdly, there is the alarm system. In order to counter an attack in space, it is necessary to maximize the intelligence gathering capabilities of tracing networks and to use them in

alarm systems to warn of attack. As soon as indications of an attack appear, a space attack alarm will be sounded.

Actions give rise to reactions. The appearance of one type of advanced weapon will lead to the appearance of another type of weapon to counter it. In response to the growth in the activities of satellites and spacecrafts, and to the increases in military communications and the appearance of orbiting bombs, methods with which to oppose these military activities are continuously produced and developed. The uninterrupted refinement of space weapons attack methods and defense operations promote space war.

A space attack defense system should provide for the detection of the "enemy" (spy satellite or craft, or the orbiting bomb), as well as for the accurate and timely siting of the enemy, and its immediate destruction or incapacitation.

Methods and Attack Strategies

What are the methods that superpowers use in conducting space war?

The earliest method to be used was to launch a ballistic missile directly at the military satellite in space to destroy it. The anti-ballistic system of the Soviet revisionists has long had the capability of opposing satellites. The American imperialists have also learned how to create weapons systems which use ballistic missiles to counter satellites. From 1962 to 1964, the American imperialists studied the Nike -- Zeus -- antiballistic ballistic missile and the Thunder God -- Agena -- ballistic missile as foundations for two satellite weapons systems. They were tested separately many times, and were initially

successful in attacking satellites.

As space technology has developed, competition between the two superpowers has become more intense. Besides learning how to manufacture direct ballistic intercepting satellites launched from the ground, they also took positive steps toward developing maneuverable satellite interceptors (so-called anti-satellite satellites) which can destroy enemy satellites. At the present time, the most important innovation being investigated is the satellite interceptor which maneuvers itself into a position near the enemy satellite and destroys it by blowing itself up; or the satellite interceptor which, directed by an automatic guiding device, uses its own jet propulsion to gain speed and collides with the target at high speed, smashing them both to bits.

There are still other ways of destroying the enemy in space war. For example:

(1) Using shrapnel to attack and destroy. A ballistic missile is installed with a satellite interceptor, and is launched toward the target. When it is near the target the warhead explodes, shooting out great quantities of particles toward the target and destroying it; or, when the ballistic missile nears the target it shoots out large quantities of bullets to destroy the target.

(2) Using laser weapons. The satellite interceptor shoots a laser beam (laser weapon) at the target and destroys it, or destroys the target's energy source. Of course, under exposure to high radiation from the laser beam, the satellite's photographic equipment and other electrical equipment is also destroyed, incapacitating the satellite.

(3) Using radiation-beam weapons. From the ground or from an interceptor in space, a beam of electrically-charged particles (radiation-beam weapon) is shot at the target to destroy it. The electrically-charged particles (such as electrons and protons) go through an accelerator in order to become a strong beam of charged particles which moves at the speed of light through space toward the target, thereby destroying it upon impact.

In addition, as the space target is revolving in orbit, it leaves a cluster of particles and metal fragments behind, which can also be used to destroy a satellite. With a man-made magnetic or electric field, the target can also be incapacitated. There are even some who have devised ways to use manned spacecrafts or operable interceptors (such as the cruise missile now being developed), to reach out a mechanized arm to capture the enemy satellite (Illustration 1).

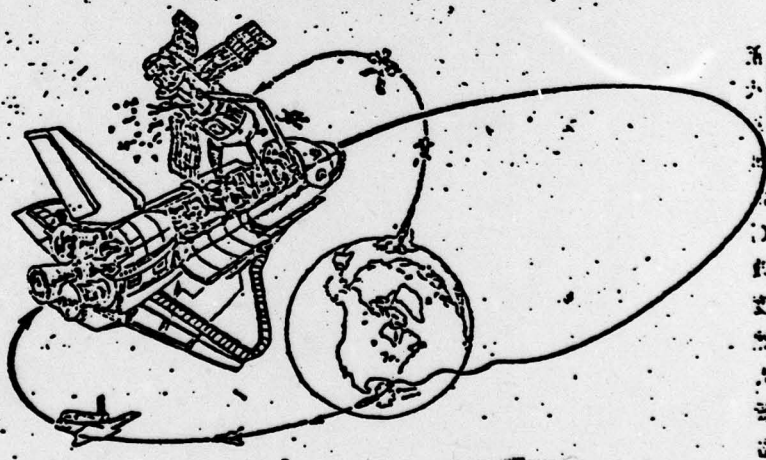


Illustration 1: During a space war a cosmonaut cuts off the enemy satellite's solar battery panel; a mechanized arm is used to capture the enemy ship and bring it into the body of the mother ship.

The methods described above are all in the planning, designing or experimentation stages, and are still a long way from actually being implemented.

For the most important methods of attack, see the insert in this issue.

What strategies can the interceptor follow in attacking its target? Generally speaking, if the method is different, the strategy is also different. Here are two types:

First, is the strategy of confrontation attack (also called head-on attack), in which the interceptor, after entering the target's orbit, meets it (face to face) and destroys it, as in Illustration 2.

Second, is the strategy of pursuing attack (also called attack from the rear), in which the interceptor maneuvers itself so as to enter the target's orbit, and, speeds up behind it to attack and destroy it.

No matter which strategy of attack is chosen, the interceptor must always be capable of changing orbit and being maneuverable. (Anti-satellite ballistic intercepting satellites need not fulfill these requirements, but can follow different types of attacking strategies. An article entitled "Anti-Satellite Weapons" in the second issue, 1976, of this publication introduces this subject.) Before the attack, ground tracing networks or the interceptors themselves must constantly observe the interceptor's position and motion relative to the target. They must estimate the correct siting coordinates and make timely adjustments in the interceptor's position, correcting the interceptor's traveling path, and ensuring that the interceptor accurately destroys the target.

Because both the interceptor and the target are moving at such great speeds, when they are engaged in a head-on attack their relative speed reaches twice the satellite's travelling speed. This circumstance can be utilized to its fullest potential by an intercepting satellite in reaching its goal of destroying the target. If it has emitted a large amount of metallic particles, extreme friction will occur as the enemy satellite, travelling at a speed of 19 kilometers/second passes through them, causing intense heat and burning up the enemy ship. If they collide at such high speeds the ship will be completely destroyed as well.

The Interceptor in Space War

What is the nature of an interceptor in space war?

An interceptor in space war is a travelling weapon which directly carries out the duty of intercepting. It can be an anti-satellite ballistic missile, a manned spaceship or an anti-satellite satellite, etc. Here we will only introduce the orbiting interceptor.

To start, the interceptor is launched by a multi-stage carrier rocket. The rocket (whether a solid- or liquid-fuel multi-stage rocket) propels the interceptor into terrestrial orbit (the satellite's orbit), just as a manned earth satellite is launched. Then, an offensive strategy is chosen according to the nature of the opponent, and the interceptor is "piloted" (guided) according to this offensive strategy to change its original orbit (the plane of the orbit is changed by raising or lowering the altitude of the orbit). When it approaches the target it will suddenly attack the "enemy" -- military satellite -- by surprise, sending the "enemy" to its death. This is a

simple way for an interceptor to completely destroy a target. If it is to be put into effect, the interceptor must contain piloting controls, stabilizers, power sources, warheads, and equipment for calculating the precise location of the target.

The most important function performed by the interceptor's guiding equipment is to "pilot" (guide) the interceptor along the chosen attack pattern so that it can achieve its goal of destroying the target.

The function of the stabilizing equipment is to insure the stability of the interceptor as it travels through space.

The power equipment supplies the power needed for the interceptor to maneuver in orbit and to maintain stability. At the present time, the most commonly used devices are the thrust and direction-changing propellers or small jets, which supply the proper amount of power according to maneuvering and piloting needs.

The warhead is the part which actually inflicts damage on the target. Its function is to destroy or blow up the target and thereby to incapacitate it. It is much more versatile than the warheads of conventional weapons, in that it includes common types of warheads (loaded with bullets or shrapnel), nuclear warheads, laser weapons, radiation-beam weapons or metal fragments, etc.

In order to guarantee the success of the attack strategy, it is very important that the relative position and motion of the interceptor and its target be ascertained minute by minute. This function is performed by measuring equipment (such as radar) or space tracing networks. Radar equipment installed within the interceptor also has this capability. It takes the measurements

of position and speed and instantaneously transmits it to the master control system, which facilitates maneuvering the interceptor into the attacking pattern and obtaining an exact site on the target.

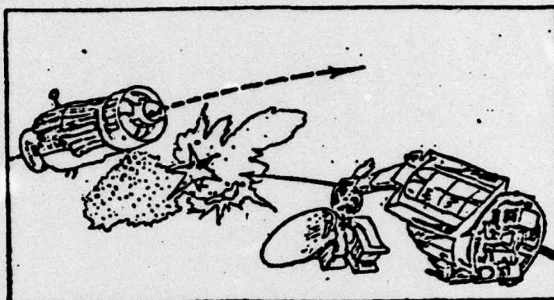


Illustration 2: The interceptor destroys the target head-on.

Actively Practicing Space War

The two superpowers have currently initiated the space arms race, even before space war has begun, in order to conquer the world and to monopolize outer space. The Soviet revisionists and the American imperialists compete with each other first and use caution later. The curtain has gone up on a disturbing drama about expanding armies and war preparations in space.

From October 1968 to late 1971, the Soviet revisionists conducted eight tests on intercepting satellites. The period from October 1968 to October 1970 was the first experimental stage, during which four tests were conducted. The last four tests were all conducted in 1971, an experimental stage in the use of these weapons which was directed at the goal of improving

and perfecting anti-satellite weapons. In these few tests, the closest range for the satellite was 500 to 600 kilometers, and the farthest was 500 to more than a thousand kilometers. Obviously, the goal of the Soviet revisionists was to attack the various types of low-altitude reconnaissance satellites and the relatively high-altitude ballistic satellites.

From the beginning of 1976 to October 27, 1977, the Soviet revisionists also conducted seven tests on intercepting satellites. The testing process consisted roughly of launching a Cosmos satellite into orbit, obtaining accurate orbiting data, and a few days later launching another Cosmos satellite -- the satellite interceptor -- which was then guided into a new orbit and maneuvered into position in order to pursue the first satellite. The results of many tests demonstrate that the Soviet revisionist anti-satellite weapon system is about to enter the implementation stage. Its capabilities are still being improved constantly in order to reach the capability of intercepting synchronous earth-orbiting satellites (orbiting at an altitude of approximately 36,000 kilometers).

Since the decade of the 1960s the Americans have been working on developing anti-satellite weapons. However, because of an economic crisis and other reasons, this work was forced to stop. As for the isolated anti-satellite weapon systems, such as tracing, discriminating, approaching, destroying, and other necessary mechanisms, these are still being tested. The Soviet revisionists' accelerated experiments on anti-satellite weapons provoked the American imperialists to begin conducting studies on anti-satellite weapons in 1972. Moreover, they have been experimenting with observation, attack and destruction of enemy space targets, as well as in other areas. According to foreign broadcasts in September 1977, the American imperialist air force entered into an agreement with Vought Corporation of Dallas for

the manufacture of satellite destroying weapons worth USD 58.7 million. The Americans are catching up quickly, and the two hegemonies are engaged in a life or death competition for space weapons in which neither dares to fall behind.

Why are the two superpowers so preoccupied with space war preparedness? The reason is that the two hegemonies have designs to conquer the world and to monopolize outer space. However, history proves that imperialism and other reactionary ideologies are only paper tigers, and some day they will be conquered by people's revolutions. The scientific technology which the people devise must be returned to the people.

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